

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed January 26, 2006 (“Office Action”). At the time of the Office Action, Claims 1-28 were pending in the Application. In the Office Action, the Examiner rejects Claims 1-28. Applicant amends Claims 1, 8, 13, 14, 18, and 22. As described below, Applicant believes all claims to be allowable over the cited references. Therefore, Applicant respectfully requests reconsideration and full allowance of all pending claims.

Section 103 Rejections

The Examiner rejects Claims 1-12, 14-17, and 22-28 under 35 U.S.C. § 103(a) as being unpatentable over C.M.R. Leung “An object-oriented approach to directory systems,” - 1990 (“*Leung*”) in view of Hong et al. “Design and Implementation of a Distributed Applications Testbed” - 1993 (“*Hong*”). The Examiner rejects Claims 13 and 18-21 under 35 U.S.C. § 103(a) as being unpatentable over *Leung* in view of *Hong* as applied to Claims 1-12, 14-17, and 22-28 above, and further in view of M.A. Bauer et al. “A simulation Model of X.500 Directories Initial Experiences” - 1991 (“*Bauer*”). Applicant respectfully traverses these rejections for the reasons stated below.

A. The Claims are Allowable

1. Claims 1-12, 14-17, and 22-28 are Allowable over the proposed *Leung-Hong* Combination

Independent Claim 1 of the present application, as amended, recites:

A method of arranging data in a database comprising:
creating a first table adapted for storing data comprising at least one data entry, the data entry comprising a plurality of data components, the first table comprising one row for each data entry; and

using the first table to create a second table adapted for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components of the data entry of the first table.

Applicant respectfully submits that neither *Leung* nor *Hong* (nor their proposed combination) discloses, teaches, or suggests each and every element of Applicant's Claim 1.

For example, Applicant respectfully submits that the proposed *Leung-Hong* combination does not disclose, teach, or suggest "using the first table to create a second table adapted for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components of the data entry of the first table," as recited in Applicant's Claim 1. In the Office Action, the Examiner that *Leung* fails to disclose "a second table adapted for storing data components and having one row for each component of data." (Office Action, page 3). Instead, the Examiner relies on *Hong* for disclosure of the recited features. *Hong* merely discloses, however, a "distributed applications testbed for the experimental study of problems related to X.500 distributed directories." (Abstract). *Hong* provides background information relating to the X.500 Directory Service. Specifically, *Hong* states that according to the X.500 Directory Service the "information held by the Directory is called the Directory Information Base (DIB) . . . [and] consists of entries (or objects) which contain information about entities." (Page 172, Section 3.2, paragraph 2). "Entities in the DIB are represented by entries in a global, hierarchical name space called the Directory Information Tree (DIT). Entries are placed in the DIT according to the organizational relationships between the entities which they represent." (Page 172, Section 3.2, paragraph 3). Thus, the background information provided by *Hong* merely relates to the organization of the entries of the DIB within the structure of the DIT.

Hong then goes on to propose a X.500 testbed that allows "different directory service requests to be sent to [Directory System Agents (DSAs)]" responsible for a portion of the DIT. (Page 172, Section 3.2, paragraph 3). Specifically, the DIT is "divided into partitions among the DSAs in a directory domain (for example, within a country or an organization." (Page 172, Section 3.2, paragraph 2). As a result of this partitioning,

“entry data that will go into each DSA’s DIB” is stored “in individual DIBs.” (Page 172, Section 3.2, paragraph 3). Thus, *Hong* merely discloses partitioning the data entries in the DIT into individual DIBs that are then assigned to DSAs. *Hong* does not disclose, teach, or suggest “using the first table to create a second table adapted for storing the plurality of data components of the data entry of the first table” and certainly does not disclose, teach, or suggest “the second table comprising one row for each of the plurality of data components of the data entry of the first table,” as recited in Applicant’s Claim 1. These elements are absent from *Hong*.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 1, together with Claims 2-7 that depend from Claim 1.

With regard to independent Claim 8, Applicant respectfully submits that neither *Leung* nor *Hong* (nor their proposed combination) discloses, teaches, or suggests “a subsearch table created from the search table, the subsearch table comprising one row for each data component of the at least one row of the search table.” As explained in the previous Response to Office Action submitted on September 2, 2005, the X.500 directory implementation of *Leung* merely discloses two relational tables, the DIT and ENTRY tables. (Page 88, lines 14-16). The DIT table “holds the information of the structure of the DIT” and includes a record for each object. (Page 88, lines 15-16 and Figure 4b). The ENTRY table “holds detailed information about each directory object” and, thus, also includes a record for each object. (Page 88, lines 17-19 and Figure 4b). Accordingly, Applicant submits that *Leung* indicates that for each record in the DIT table there will be a corresponding record in the ENTRY table. As such, the directory implementation of *Leung* does not include “a subsearch table created from the search table, the subsearch table comprising one row for each data component of the at least one row of the search table,” as recited in Applicant’s Claim 8.¹

¹ Although the Examiner continues to rely on *Leung* for disclosure of the recited features of Claim 8, Applicant notes that the Examiner’s acknowledgement in the Office Action dated January 26, 2006, that certain analogous features recited in Claim 1 are not disclosed in *Leung*. Specifically, the Examiner states with regard to Claim 1 that “*Leung* fails to “explicitly disclose creating a second table adapted for storing

The deficiencies of *Leung* are not cured by the additional disclosure of *Hong*. As discussed above with regard to Claim 1, *Hong* merely relates to the organization of the entries of the DIB within the structure of the DIT. Specifically, the X.500 Directory testbed of *Hong* allows “different directory service requests to be sent to [Directory System Agents (DSAs)]” responsible for a portion of the DIT. (Page 172, Section 3.2, paragraph 3). Thus, the DIT is “divided into partitions among the DSAs in a directory domain (for example, within a country or an organization.” (Page 172, Section 3.2, paragraph 2). As a result of this partitioning, “entry data that will go into each DSA’s DIB” is stored “in individual DIBs.” (Page 172, Section 3.2, paragraph 3). Applicant respectfully submits that the partitioned data entries in the DIT, as disclosed in *Hong*, are not analogous to “a subsearch table created from the search table, the subsearch table comprising one row for each data component of the at least one row of the search table,” as recited in Claim 8.

Independent Claim 14 and 22 recite certain limitations that are similar to the features discussed above with regard to Claim 1. As an example, Claim 14 recites “a second table created from the first table, the second table arranged for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components of the data entry of the first table.” As another example, Claim 22 recites “the given data entry of the first table comprising a plurality of data components” and “the second table comprising one row for each of the plurality of data components of the given data entry of the first table.” Thus, for reasons similar to those discussed above with regard to Claim 1, Applicant respectfully submits that Claims 14 and 22 are allowable over the proposed *Leung-Hong* combination.

data components and having one row for each component of the data.” (Office Action, page 3). Accordingly, Applicant is confused by the current rejection of Claim 8, which seems to be inconsistent with the Examiner’s rejection of analogous features recited in Claim 1.

As an additional distinction, Applicant respectfully submits that the proposed *Leung-Hong* combination does not disclose, teach, or suggest “identifying a component identifier indicating a data type that is associated with the component of the first table” and “using the component identifier indicating the data type to execute one of an exact or initial matching on a column of a second table in order to locate the component in the second table,” as recited in Claim 22. As discussed in the previous Response to Office Action submitted on September 2, 2005, *Leung* discloses that each record of the DIT and ENTRY tables depicted in Figure 4b includes the system identifier of an object (i.e., “Entry-ID”). (Page 88, lines 15-18 and Figure 4b). As a result, corresponding records in the DIT and ENTRY tables may be identified by a common Entry-ID. Applicant continues to submit, however, that the Entry-ID of *Leung* is not the equivalent of Applicant’s claimed “component identifier.” *Leung* only discloses that the Entry-ID is a system identifier of an object. There is no indication in *Leung* that the Entry-ID “[indicates] a data type that is associated with the component of the first table” and that it may be used to “execute one of an exact or initial matching on a column of a second table in order to locate the component in the second table,” as recited in Applicant’s Claim 22.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of independent Claims 8, 14, and 22, together with Claims 9-12, 15-17, and 23-28, which depend from Claims 8, 14, and 22, respectively.

2. Claims 13 and 18-21 are Allowable over the proposed *Leung-Hong-Bauer* Combination

Independent Claim 13 of the present application, as amended, recites:

A database having a data storage arrangement comprising:
a first table directed to a hierarchy which defines a relationship between a plurality of objects and configured to have one row per object;
a second table created from the first table and directed to the plurality of objects of the first table, the second table defining

one or more values within each of the plurality of objects of the first table and configured to have one row per value; and

a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values of the second table.

Applicant respectfully submits that the *Leung-Hong-Bauer* combination does not disclose, teach, or suggest each and every element of Applicant's Claim 13.

For example, Applicant respectfully submits that the *Leung-Hong-Bauer* combination does not disclose, teach, or suggest "a second table created from the first table and directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects of the first table and configured to have one row per value," as recited in Applicant's Claim 13. Certain of the features in the recited claim language is analogous to features discussed above with regard to Claim 1. Accordingly, for reasons similar to those discussed above with regard to Claim 1, Applicants respectfully submit that the proposed *Leung-Hong-Bauer* combination does not disclose, teach, or suggest "a second table created from the first table and directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects of the first table and configured to have one row per value," as recited in Applicant's Claim 13.

Additionally, Applicants respectfully submit that the *Leung-Hong-Bauer* combination does not disclose, teach, or suggest "a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values of the second table," as recited in Applicant's Claim 13. In the Office Action, the Examiner acknowledges that *Leung* fails to explicitly disclose a third table. (Office Action, page 7). Instead, the Examiner relies on *Bauer* for disclosure of the above-recited features. Like *Hong*, *Bauer* merely relates, however, to a "testbed to be used in investigating the behavior of X.500 directories in large distributed environments." (Abstract). More specifically, *Bauer*

“reports on initial results of a simulation of an X.500 distributed environment, as well as on the methodology and on experiences with the tools and techniques used.” (Page 256, Section 1, paragraph 2). In all, “18 experiments were run, each for a simulated time period of 4 hours.” (Page 265, Section 4, paragraph 1). *Bauer* summarizes the results of the 18 experiments in Tables 3 to 8 on pages 265-271. Information in the tables includes the average number of requests processed by the DSAs, the standard deviation of the number of requests, the average size of the request queue, the standard deviation of the request queue, the maximum size of the request queue, and the minimum size of the request queue. (Page 265, Section 4). None of the illustrated tables, however, relate to “a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values of the second table,” as recited in Applicant’s Claim 13.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 13.

Independent Claim 18 recites certain limitations that are similar to the features discussed above with regard to Claim 13. As an example, Claim 18 recites “a second table created from the first table and directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects of the first table and configured to have one row per value.” As another example, Claim 18 recites “a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values of the second table.” Thus, for reasons similar to those discussed above with regard to Claim 13, Applicant respectfully submits that Claim 18 is allowable over the proposed *Leung-Hong-Bauer* combination.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 18, together with Claims 19-21 which depend from Claim 18.

B. The Proposed Combinations are Improper

The M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations.” M.P.E.P. § 2142, 2143. The teaching, suggestion or motivation for the modification or combination and the reasonable expectation of success must both be found in the prior art and cannot be based on an Applicant’s disclosure. *See Id.* (citations omitted). “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.² According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). “Evidence of a

² Note M.P.E.P. 2145 X.C. (“The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.”).

suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembicza*k, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant’s disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, “The tendency to resort to ‘hindsight’ based upon applicant’s disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. “A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.’” *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a motivation to combine the references that create the case of obviousness. *See id. See also, e.g., Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembicza*k, the Federal Circuit reversed a finding of obviousness by the Board, explaining

that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

In the Office Action, the Examiner acknowledges, with regard to Claim 1, that *Leung* does not disclose creating a second table. (Office Action, page 3). In maintaining the rejection, the Examiner speculates that “[i]t would have been obvious to one [of] ordinary skill in the art at the time the invention was made to modify *Leung* with creating a second table adapted for storing data components and having one row for each component of the data . . . to increased reliability and performance of the directory searching methods and systems.” (Office Action, page 3, citing *Hong* page 170, col. 1, paragraph introduction). With respect to Claims 13 and 18, the Examiner also speculates that “[i]t would have been obvious to one [of] ordinary skill in the art at the time the invention was made to modify *Leung* with a third table directed to one or more selected components of the one or more values of the second table . . . to provide directory services in a distributed system environment and to evaluate changes to the standard.” (Office Action, page 7).

It appears that the Examiner has merely proposed alleged advantages of combining *Leung* with *Hong* and *Bauer* (advantages which Applicant does not admit could even be achieved by combining these references in the manner the Examiner proposes). While the Examiner has cited portions of *Hong* and *Bauer* that tout advantages of their respective techniques, the Examiner has not pointed to any portions of the cited references that would teach, suggest, or motivate one of ordinary skill in the art at the time of invention to

incorporate the features of the respective *Hong* and *Bauer* techniques into the object-oriented database disclosed in *Leung*. In other words, the alleged advantage of the system disclosed in *Hong* does not provide an explanation as to: (1) why it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention (*without using Applicant's claims as a guide*) to modify the particular techniques disclosed in *Leung* with the cited disclosures of *Hong* and *Bauer*; (2) how one of ordinary skill in the art at the time of Applicant's invention would have actually done so; and (3) how doing so would purportedly meet the limitations of Applicant's claims.

Indeed, if it were sufficient for Examiners to merely point to a purported advantage of one reference and conclude that it would have been obvious to combine or modify that reference with other references simply based on that advantage (which, as should be evident from the case law discussed above, it certainly is not), then virtually any two or more references would be combinable just based on the fact the one reference states an advantage of its system. Of course, as the Federal Circuit has made clear and as discussed above, that is not the law. Accordingly, Applicant respectfully submits that the Examiner's conclusions set forth in the Office Action do not meet the requirements set forth in the M.P.E.P. and the governing Federal Circuit case law for demonstrating a *prima facie* case of obviousness.

For at least these reasons, Applicant submits that the rejection of Claims 1-28 is improper. Applicant respectfully requests reconsideration and allowance of Claims 1-28.

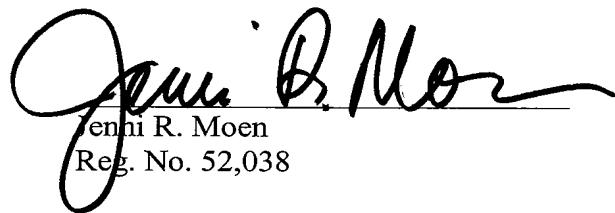
CONCLUSION

Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Jenni R. Moen, Attorney for Applicant, at the Examiner's convenience at (214) 953-6809.

Applicant believes that no fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
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